IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
In re the application of: NOORDAM, Bertus; *et al.*	Attorney Docket No.: 2917824-002000
	Confirmation No.: 3475
Application Serial No.: 10/584,847	Group Art Unit: 1789
Filed: June 28, 2006	Examiner: KING, Felicia C.
For: Process for the production of compositions containing ribonucleotides and their use as flavouring agents	

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Filed via EFS

Members of the Panel:

This paper is submitted in response to the final Office action mailed July 28, 2010. Accordingly, a timely response is due on or before December 28, 2010 with a concurrently-submitted Notice of Appeal and payment for a two-month extension of time.

Claim Status

Claims 1-10 and 19-22 are pending in this application. The claims are drawn to, *inter alia*, a process to produce a composition containing 5'-ribonucleotides comprising converting the RNA in a recovered RNA-containing cell wall fraction into 5'-ribonucleotides. In the final Office action, claims 1-7, 10, 19, 20-22 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US 4,303,680 ("Tanekawa") in view of US 4,851,390 ("Morishige"), and claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Tanekawa in view of Morishige as applied to claim 1 and further in view of 1991 CRC Press, Inc. pg. 248 ("Halasz"). These rejections are respectfully traversed for at least the following reasons.

Argument

1. Neither Tanekawa nor Morishige teaches converting RNA in a recovered RNA-containing cell wall fraction into 5'-ribonucleotides, as claimed.

A. Tanekawa does not teach that RNA may be found in the cell wall fraction.

Tanekawa was cited for allegedly disclosing that "the cell wall portion contains 50%-80% intracellular RNA."[1] Tanekawa actually states that "50~80% of an intracellular RNA remains not decomposed in autolysed yeast cells,"[2] and that "50~80% of the RNA remains not decomposed in

[1] Final Office Action, 2 (Jul. 28, 2010)(citing Tanekawa, col. 2:25-28).

[2] Tanekawa, col. 2:12-13 (Dec. 1, 1981).

the autolysed yeast cells."[3] Autolysed yeast cells are still actual cells, and the statements simply teach that "intracellular RNA" is "not decomposed in the autolysed yeast cells." Indeed, Tanekawa teaches extraction applied to "the remaining intracellular RNA in the autolysed yeast cells."[4] Because Tanekawa did not comprehend that RNA is associated with insoluble cell wall components, Tanekawa's methods disregard the cell wall fraction as a source for RNA.

B. Tanekawa does not teach recovering a cell wall fraction or converting RNA in a recovered cell wall fraction.

Tanekawa was cited for allegedly teaching that "the RNA is converted to 5'-ribonucleotides in the presence of cell wall residue." Claim 1 is directed, *inter alia*, to converting the RNA in a recovered RNA-containing cell wall fraction into 5'-ribonucleotides. Tanekawa does not teach or suggest recovering a cell wall fraction, much less converting RNA in said recovered cell wall fraction to 5'-ribonucleotides.

Following either the extraction step (2), or the hydrolysing RNA into 5'-nucleotides step (3), Tanekawa teaches that "an insoluble residue which is mainly cell walls of yeast included in the heated suspension may be removed by an entirely conventional method such as centrifugation and filtration."[5] Although Tanekawa may teach solid/liquid separation of a suspension, Applicant's Amendment[6] shows schematically at FIG. 1 that: when Tanekawa's separation is performed after the extraction step (2), the separated cell wall fraction is discarded;[7] and when Tanekawa's separation is performed after the hydrolysing RNA into 5'-nucleotides step (3),[8] Tanekawa hydrolyzes RNA in the cellular suspension, not a fraction thereof, and does not "convert[] the RNA in the recovered RNA-containing cell wall fraction into 5'-ribonucleotides," as claimed. For the Panel's convenience, FIG. 1 is reproduced below:

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[3] *Id.* at col. 3:33-34.

[4] *Id.* at col. 3:49-50. *See also id.* at col. 3:41-44 ("The second characteristic of the present invention resides in step (2) of extracting the remaining RNA from the autolysed yeast cells by heating the autolysed yeast cells without use of NaCl.").

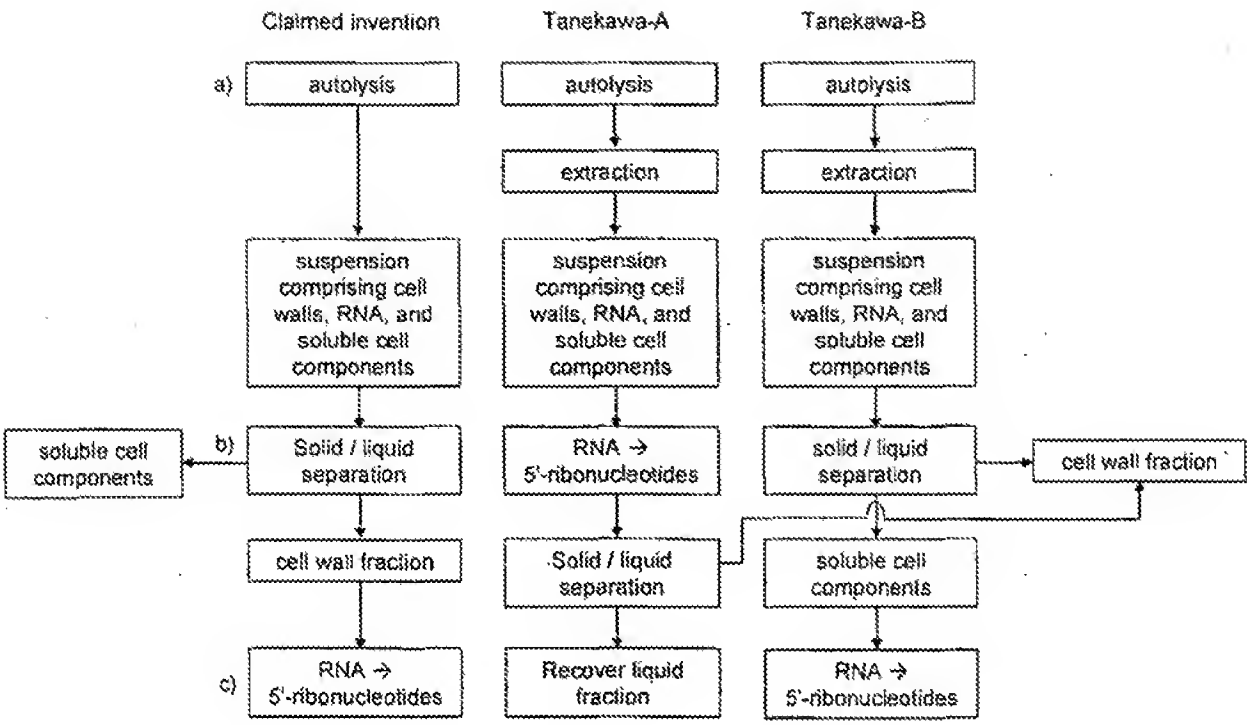
[5] *Id.* at col. 4:13-16.

[6] *See* Amendment, FIG. 1 (May 19, 2010).

[7] *See id.* ("Tanekawa-B").

[8] *See id.* ("Tanekawa-A").

Fig 1



C. Morishige does not remedy the deficiencies of Tanekawa.

Morishige was cited for allegedly teaching that "following solid-liquid separation, the solid portion contains RNA and that this portion is used and the RNA extracted is further treated."[9] Morishige must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention.[10] Morishige teaches at EXAMPLE 1, for example, that a "solid [fraction] containing ribonucleic acid was washed with 10% sodium chloride solution, and the wash liquor was recovered and combined with the [supernatant]." In other words, Morishige teaches washing the solid fraction with NaCl, which extracts RNA from the cell walls, and which contradicts the express teachings of Tanekawa.[11] Morishige does not teach "converting the RNA in the recovered RNA-containing cell wall fraction into 5'-ribonucleotides," as claimed, because the RNA of Morishige's cell wall fraction is extracted from the cell walls with NaCl, and is no longer "in the recovered RNA-containing cell wall fraction" to be converted into 5'-ribonucleotides.

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[9] Advisory Action, 2 (Nov. 18, 2010).

[10] *See, e.g.*, M.P.E.P. 2414.02(VI)(citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983)).

[11] *See* Tanekawa, col. 3:41-48 ("The second characteristic of the present invention resides in step (2) of extracting the remaining RNA from the autolysed yeast cells by heating the autolysed yeast cells without use of NaCl. Usually, it is necessary to use a fairly highly concentrated NaCl solution to extract RNA effectively from yeast cells since RNA can not be extracted without NaCl.")(emphasis added).

2. The methods of Tanekawa and Morishige contradict one another, and cannot be combined.

A. Morishige requires using 10% NaCl, while Tanekawa expressly avoids NaCl.

As noted above, Morishige teaches that NaCl is used to extract RNA from a solid fraction, while Tanekawa expressly teaches that NaCl is disfavored: "[t]he second characteristic … resides in step (2) of extracting the remaining RNA from the autolysed yeast cells by heating the autolysed yeast cells without use of NaCl. Usually it is necessary to use a fairly highly concentrated NaCl solution to extract RNA effectively from yeast cells since RNA can not be extracted without NaCl."[12] Thus, the autolysis conditions of Tanekawa and Morishige are fundamentally different.

B. Morishige teaches pH of 2, while Tanekawa teaches that yield below pH 6.0 or above pH 6.6 is too low to be economically feasible.

After heating in the presence of NaCl, Morishige teaches that "[c]oncentrated hydrochloric acid is added to the extract to form a parecipitate [*sic*]."[13] EXAMPLE 1 of Morishige teaches adding concentrated HCl to the extract to adjust to pH 2.[14] Tanekawa, however teaches that "decomposition or hydrolysis of intracellular RNA is suppressed as less [*sic*] as possible … by performing the autolysis at a constant pH ranging from 6.0 to 6.6."[15] Tanekawa takes great care to control pH, and states that "[i]n this pH range … the yield of solid matter drops gradually but on the contrary, the GMP-forming ratio becomes higher as the pH raises from 6.0 to 6.6…. When the autolysis … is carried out at a pH above 6.6, the yield of solid matter is too low for the process to be performed economically."[16] TABLE 1 of Tanekawa demonstrates that GMP content drops significantly with pH below 6.0.

Thus, Applicant respectfully submits that Tanekawa, Morishige, and the combination thereof cannot reasonably be interpreted to teach or suggest a process to produce a composition containing 5'-ribonucleotides comprising converting the RNA in a recovered RNA-containing cell wall fraction into 5'-ribonucleotides, as claimed. Nor would one of ordinary skill in the art would not have found any motivation to combine the teachings of Tanekawa and Morishige because their methods contradict one another, and even if those teachings had been combined the combination would not have taught or suggested the methods as-claimed. Accordingly, Applicant respectfully requests

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[12] *Id.*

[13] Morishige, col. 2:21-22 (Jul. 25, 1989).

[14] *See id.* at col. 3:47-49.

[15] Tanekawa, col. 3:26-29.

[16] *Id.* at col. 4:4-12.

favorable reconsideration and withdrawal of the rejection of claims 1-7, 10, 19, 20-22 under 35 U.S.C. § 103 as being unpatentable over Tanekawa in view of Morishige.

3. Halasz does not remedy the deficiencies of Tanekawa and Morishige.

Halasz was cited for allegedly teaching "yeast extracts … produced by ultrafiltering autolysates" and that "ultrafiltration … produc[es] a more organoleptically appealing composition."[17] Such a teaching, however, would not add anything to remedy the deficiencies of Tanekawa and Morishige, set forth above. Thus, Applicant respectfully submits that Tanekawa, Morishige, Halasz, and the combination thereof cannot reasonably be interpreted to teach or suggest a process to produce a composition containing 5'-ribonucleotides comprising converting the RNA in a recovered RNA-containing cell wall fraction into 5'-ribonucleotides, as claimed. Accordingly, Applicant respectfully requests favorable reconsideration and withdrawal of the rejection of claims 8 and 9 under 35 U.S.C. § 103 as being unpatentable over Tanekawa in view of Morishige, as applied to claim 1, and further in view of Halasz.

Conclusion

In view of the remarks above, Applicants respectfully submit that the stated grounds for rejection have been properly addressed and that all of the claims are patentable, and so request favorable action thereon. The Panel is invited to contact the undersigned if any additional information is required.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 50-4254, under Attorney Docket No. 2917824-002000.

Respectfully submitted,

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DATED: December 21, 2010

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[17] Final Office Action, 3 (Jul. 28, 2010).